

Health costs of ageing will shoot up without technological innovation

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Generations. Credit: Emanuele Toscano

A new report co-authored by researchers in the Department of Engineering urges government and designers to work together to break down the barriers to innovation in order to adapt to an ageing population.

The report warns that without [technological innovation](#) over the next decade, [healthcare costs](#) in the UK could be significantly higher than currently projected by the Office of Budget Responsibility (OBR).

Without productivity improvements, [health spending](#) in 2063-64 might need to be 5.0% of GDP higher than is currently projected.

The report, 'Opportunity Knocks,' published by London-based think tank International Longevity Centre-UK (ILC-UK), in conjunction with the Institute of Engineering and Technology and the Engineering Design Centre, part of the Department of Engineering at the University of Cambridge.

It points out that predictions for the growth in healthcare productivity are optimistic given historic trends, and that technological innovation will be vital to fill the gap. The authors argue that there is significant potential for responding to the challenges of ageing through new developments in wearable technologies, big data, 3D printing, cloud computing, the internet of things, and smart cities.

"Technological innovation is vital to help individuals and society as a whole adapt to ageing," said Mike Bradley of the Engineering Design Centre, which pioneered the Inclusive Design approach: designing products to be useful to as many people as possible. "But there are still many barriers to be overcome."

The report suggests that a design response to ageing can also benefit the UK economy: Those over 65 spend around £2.2 billion per week and they could be spending over £6 billion per week (£312 billion per year) by 2037.

However, one in three 85-89 year olds has difficulty shopping for groceries and more than one in ten in this age group has difficulty managing money. More than half of those aged 90 and over have difficulty shopping for groceries and a quarter of this age group have difficulty managing money. Four in ten individuals over 75 and three quarters of individuals over 85 do not have internet access.

The report highlights a range of ideas for new technology, which emerged from a workshop organised by ILC-UK, IET and the Engineering Design Centre. The ideas are designed not as 'solutions to ageing' but to highlight the potential for innovation in focusing on this consumer group. They include:

- A kettle which monitors blood pressure
- TV 'buddies' to allow people to remotely share the experience of watching a programme
- A 'cuddle cushion' which would allow relatives being able to send each other cuddles
- A smart water bottle which would prompt people to drink more to prevent dehydration
- Accessible and modern 'Boris Scooters' (or Segways) in towns and cities to help people with mild mobility impairments get around
- The development of national 'trusted information' systems for online and telephone transactions to reduce the risk of scams

"This report champions the positive impact that technology and design will play in helping us all to live longer, healthier, independent lives. However, we acknowledge that the potential of technology has not been fully realised. We also have to dispel the myth that this is simply a matter of niche solutions for an ageing society," said Gordon Attenborough, the Institution of Engineering and Technology's Head of Sectors.

"There's so much more that we should achieve through the widespread application of existing and emerging technologies. It's vital that we design and innovate with a broad range of users in mind, wholly inclusive and accessible to all. Achieve that and technology will mitigate the impending costs of an ageing society and deliver the promise it has failed to so far.

David Sinclair, Director of the International Longevity Centre – UK added: "Technology undoubtedly offers significant potential to help respond to the challenges of ageing. But the opportunity of technological innovation in this area has historically been over egged and under realised. For us to maximise the potential of new technologies however we need more evidence on what really works and whether it will save money. We need regulation which protects consumers while not preventing technological innovation. And we need industry to recognise the potential of the older consumer and design for all. Finally, we need a public debate on the challenges and opportunities of using big data to improve the lives of older people."

Professor John Clarkson, Director of the Engineering Design Centre: "This report highlights that there is a huge commercial opportunity for companies to design inclusively, driving increased customer satisfaction and boosting their market share by delivering more competitive products and services."

The report also highlights some ideas to maximise the potential of the sharing economy to support our ageing society.

Cooking buddies

A barcode scanner in the home could be used to upload the contents of your fridge to an interface which would share the information with your neighbours. Taking a peek in to each other's fridges, seeing what people had a surplus of or what was about to go out of date, could encourage neighbours to cook together making meal times more sociable.

Integrated leisure and transport

Leisure activities, such as a trip to the theatre or to a restaurant, could

come with transport included. When you book a ticket there could be the option to also book transport. If a large number of people were also booking transport to an event a mini-bus could then be sent to collect them all at a much lower costs than them all booking taxis separately.

Provided by University of Cambridge

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